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February 1, 1963

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NATIONAL AERONAUTICS
AND SPACE ADMINISTRATION

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AGENA MONTHLY PROGRESS REPORT

by

LIGHT AND MEDIUM VEHICLES OFFICE

GEORGE C. MARSHALL SPACE FLIGHT CENTER

HUNTSVILLE, ALABAMA

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MSFC - Form 823 (December 1960)

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GEORGE C. MARSHALL SPACE FLIGHT CENTER

MPR-A-63-2

AGENA MONTHLY PROGRESS REPORT

for

JANUARY 1963

(U) ABSTRACT

This report covers the activities during the month of January along with current status and future plans, and schedules relative to the Agena Launch Vehicle Programs. The programs are progressing in an orderly manner with only minor problems.

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GEORGE C. MARSHALL SPACE FLIGHT CENTER

MPR-A-63-2

AGENA MONTHLY PROGRESS REPORT

JANUARY 1963

AGENA SYSTEMS OFFICE

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ABBREVIATIONS

AGE	Aerospace Ground Equipment
AMR	Atlantic Missile Range
AVT	Application Vertical Test
A-12	Echo A-12 Communications Satellite
CC&S	Central Computer & Sequencer
DAC	Douglas Aircraft Company
DSIF	Deep Space Instrumentation Facilities
EOGO	Eccentric Orbiting Geophysical Observatory
GAEC	Grumman Aircraft Engineering Corporation
GD/A	General Dynamics/Astronautics
GSFC	Goddard Space Flight Center
LMSC	Lockheed Missiles & Space Company
LOC	Launch Operations Center
LRC	Langley Research Center
MSC	Manned Spacecraft Center
Nimbus	Nimbus Meteorological Satellite
OAO	Orbiting Astronomical Observatory
OGO	Orbiting Geophysical Observatory
PFRT	Preliminary Flight Rating Test
PMR	Pacific Missile Range
POGO	Polar Orbiting Geophysical Observatory
SCTB	Santa Cruz Test Base
SSD	Air Force Space Systems Division
STL	Space Technology Laboratories
S-27	Swept Frequency, Topside Sounder
VAFB	Vandenberg Air Force Base

GEORGE C. MARSHALL SPACE FLIGHT CENTER

MPR-A-63-2

AGENA MONTHLY PROGRESS REPORT

for

January 1963

(U) SUMMARY

This report covers activities during the month of January along with current status and future plans and schedules relative to the Agena Launch Vehicle Programs. Programs are progressing in an orderly manner with only minor problems.

This will be the final Monthly Progress Report issued by the Marshall Agena Systems Office. Lewis Research Center assumes official operating responsibility on January 28, 1963, and therefore, all future Agena reporting will be generated and distributed from Lewis Research Center, Cleveland, Ohio.

(C) PROGRAM STATUS

A. (U) AGENA GENERAL

1. By agreement, January 28 is the date LeRC will assume official operating responsibility of the NASA Agena Program. NASA Headquarters will officially notify all interested agencies and contractors.

2. Eighteen people, including Dr. S. C. Himmel, Manager, and Messrs. E. F. Baehr and C. C. Conger, Deputies, were at MSFC, Tuesday, January 15 through noon on Friday, January 18, 1963, for familiarization with the Agena vehicle system and its operation. All aspects of the program were reviewed in considerable detail in group and individual discussions and presentations. In addition to the above eighteen, two people were at MSFC on January 16 only for trajectory discussions with MSFC Aeroballistics Division; and two people from budget and fiscal offices on January 16 and 17. Summaries of the individual and group presentations, and of individual discussions with the LeRC personnel on January 15-18, were prepared and transmitted to LeRC.

3. Approximately twenty-seven people from the Agena Office (including one from M-AERO) will be on TDY to LeRC commencing on January 28. Period of TDY will be determined by mutual agreement between MSFC and LeRC on individual basis. All MSFC Agena Records, group and individual files were inventoried in preparation for shipment to LeRC. MSFC Form 72 was completed for all material classified Secret; Confidential and unclassified documents were listed individually and all correspondence files were listed by folder title or a file index was provided. Twenty cabinets, made up of legal and letter size, were shipped by a special sealed truck from MSFC on January 25, 1963, scheduled to arrive at LeRC on the morning of January 28, 1963.

4. Transfer of MSFC field office personnel will also be effective on January 28. The offices at LMSC and AF/SSD will transfer intact with two exceptions: Mr. A. B. Triche at LMSC has accepted a position as MSC representative at LMSC; and Mr. Walter Dale, MSFC Reliability representative at LMSC is available for reassignment to another MSFC program at LMSC. Major Murphy, in the MSFC Operations Office at PMR, will be transferred to MSFC. Other members of the PMR office will be reassigned to GSFC Field Project Branch.

5. During this week of January 21, a list of all outstanding problems and pending actions was compiled for transmittal to LeRC. These generally were listed in a standard format of subject, background, current status, pending action, and recommendations. Recommendations were included on those items where appropriate.

6. LeRC personnel participated with MSFC in meetings on Mariner C and Ranger at JPL on January 23 and 24. They also participated with MSFC in a POGO contract fact finding meeting at LMSC on January 24 and 25. LeRC personnel were invited but could not participate in the Lunar Tracking Panel Meeting at the Cape on January 23, 1963.

7. A TWX was sent to LeRC emphasizing the desirability of immediate assignment of LeRC personnel to work with the SLV-3B Task Groups. On January 25, 1963, Dr. Himmel advised that Mr. Norman Pontius would report to AF/SSD on that date for work in the Reliability Task Group. Other assignments are anticipated in the near future.

B. (U) MARINER R-62 (VENUS FLY-BY)

1. On January 3, 1963 radio transmission from the Mariner II spacecraft ceased. Mariner II passed within 21,600 miles of Venus on December 14, 1962 after a historic 180 million mile journey. Mission objectives were successfully accomplished. Scientific results obtained are being evaluated and released by the scientists responsible for the various experiments on board the spacecraft.

C. (U) MARINER R-64

1. Official notification has been received from NASA Headquarters to cancel the two Mariner R Venus Fly-by Missions scheduled for early CY 64. The reason for this cancellation is primarily the success of the Mariner R-2 ('62) mission and the relatively small increase in benefits beyond those of the '62 mission which could be realized with the funds required to carry out the Mariner R Mission in 1964.

D. (U) MARINER C - MARS FLY-BY

A Design Review of the Mariner C was held on January 23, 1963. MSFC, JPL, LeRC, Air Force and LMSC participated in this Review.

Listed below are primary items discussed and their status.

1. Contractual Coverage

   a. AF/SSD to let Letter Contract to LMSC by February 1, 1963. Letter Contract is necessary to meet JPL requirements for certain hardware schedules. Hardware items necessitating a February 1 go-ahead are the Shroud and Adapter.

   b. AF/SSD to have definitive contract with LMSC by 1 July 1963.

   c. A preliminary Statement of Work covering the Letter Contract has been issued by AF/SSD.

2. Type of Shroud

   a. The primary design will be of the UNIPAC concept. This basically is a fibreglass clamshell structure separated into two halves and from the Agena by a shaped charge. MSFC has recommended this approach to both LeRC and JPL. This concept was agreed to by JPL at the Design Review.

   b. JPL has requested a back-up shroud design. This is to be an over-the-nose type concept and will be carried only to drawing release. Use of this back-up design will be used only in the event of unforeseen developmental problems with the UNIPAC

3. Spacecraft Weight and Performance Improvements

   a. JPL stated the spacecraft weight will be between 590-610 pounds including 60 pounds of payload support.

   b. This mission will utilize the Agena D vehicle. The improvement program approved for the Agena D and funded by the Air Force will add a payload capability of 104 pounds.

4. Restraints and Schedules

a. JPL is to issue the preliminary Restraints Document by February 1, 1963. (JPL Spec. 31176)

b. LMSC has issued a preliminary key interface schedule. (LMSC A372113)

c. A meeting is to be held prior to February 2, 1963, to discuss the Restraint Document and Interface Schedules. JPL, LMSC, and LeRC will participate in this meeting.

E. (C) MARINER C TEST SHOT

JPL has requested NASA Headquarters to approve a test shot to be launched in May of 1964. The mission configuration is to be identical, if possible, with the Mariner C fly by mission. The purpose is to prove out the spacecraft and vehicle prior to the Mars fly-by shot. This request is being considered but has not yet been approved by NASA Headquarters.

F. (C) RANGER

A review of the Ranger Program was held at JPL on 23 and 24 January 1963. The following is a list of items discussed and the conclusions that were reached.

1. (C) Configuration and Launch Schedules:

a. JPL has proposed a schedule for the CY 63 and CY 64 Ranger Program. This is as follows:

RA 6	Oct 1963	Pad 12
RA 7	Nov 1963	Pad 13
RA 8	Dec 1963	Pad 12
RA 9	June 1964	Pad 12
RA 10	July 1964	Pad 13
RA 11	Aug 1964	Pad 12
RA 12	Sept 1964	Pad 13

b. AF/SSD has an action item to investigate the Launch Pad schedules for Complex 12, 13, and 14 at AMR to determine the feasibility of meeting the schedule requested by JPL.

c. JPL desires that all Ranger missions in CY 63 be of one configuration and that the block of 4 for CY 64 be of one configuration.

d. The block for CY 63 would only carry the TV camera experiment.

e. NASA Headquarters is to advise LeRC by January 28 on new approved Ranger schedule.

2. (U) Spacecraft Weight and Performance Improvements

a. JPL stated the desired S/C weight is 800-825 pounds. This is an increase of 25-50 pounds over the original RA-789 Configuration and 60-85 pounds over the original RA-6 configuration.

b. JPL requested, in light of the above requirements, that the launch vehicle capability be increased by 50-100 pounds.

c. Areas of improvement in vehicle capability are as follows:

(1) Agena - LMSC has proposed improvements amounting to a possible 64 pounds increase (LMSC letter A340683, dated January 10, 1963). Presently, there are some reservations by MSFC as to the feasibility of achieving the full 64 pound increase. MSFC is of the opinion that 35 pounds definitely looks feasible. AF/SSD has been requested to obtain an itemized cost estimate from LMSC on their proposal. At this time, final recommendations will be made by MSFC/LeRC to incorporate those items deemed feasible.

(2) Atlas - Several items are under consideration for additional payload gain involving the Atlas. These are (1) Booster Steering (20 pounds) (2) Optimized Pitch Program (10 pounds) and (3) Lightweight Telemetry (7 pounds). AF/SSD is to determine the feasibility of these items and make recommendations to LeRC.

(3) Parking Orbit - JPL is to state their position on the use of a 92 nautical mile parking orbit to LeRC by March 1, 1963. This can gain approximately 13 pounds of payload capability.

(4) Total Payload gain of items listed above would be 85 pounds assuming only 35 pounds for the Agena improvements. This gain would satisfy JPL's requirements for the greater payload capability.

d. JPL is to determine their position on a request for waiver of the Agena Command Destruct and inform LeRC by letter by February 15, 1963. Deletion of this Destruct can gain an additional 21 pound of payload weight.

3. (U) Reliability Improvements:

a. JPL has requested MSFC, due to the Ranger schedule slip, to initiate an additional vehicle reliability improvement program to enhance mission success.

b. An improvement program has been initiated on Atlas vehicle 250 D (RA-6). An Aerospace Team, familiar with the Mercury Program, took part in the final phase of Atlas manufacture, assisted in System tests, and will follow the missile to the range. There they will assist the firing crew in preparation for launch and the actual launch.

G. (U) EOGO

1. The match-mate test phase of the EGO was performed January 7 thru January 15. The flight shroud ring and the Agena flight forward equipment rack were used with the mass C.G. model of the spacecraft. The interstage was flight-type but will not be the flight item. The shroud ring was shimmed with solid mechanical shims to bring it within .002 inch at the bolt positions. Ring assembly and disassembly repeatability tests were considered particularly important and were completed with gratifying success. The measured differences of alignment were within .002 inch. The spacecraft was also successfully mounted and aligned. Personnel from MSFC attended these tests.

The weight problem on EOGO is considered critical unless immediate corrective action is taken by GSFC. In view of this, a letter was initiated by MSFC reviewing the weight history and recommending appropriate action by GSFC.

H. (U) POGO

A fact finding meeting was held at LMSC on the 24th and 25th of January. The prime purpose for this meeting was to discuss the scope of work and the present status of POGO. This meeting was attended by personnel from LeRC, MSFC, STL, AF/SSD, AFPR (Lockheed), and NASA Liaison Office (Sunnyvale).

I. (U) OAO

1. Basic design of the OAO Launch Vehicle is nearing completion, subject only to results of the various test programs planned. Fabrication has begun on the Atlas tanks and test hardware to be used in the Component and Pt.Loma test programs. An accurate detailed layout of the present OAO vehicle status is available in the form of Revision H to the OAO Space Vehicle Milestone Network (PERT).

2. The LMSC Work Statement on OAO has been reviewed and approved and the contract has been negotiated. The GD/A Work Statement on OAO was approved in January 1963, and contract negotiations are to begin in March 1963.

3. A status review of GD/A's OAO effort was held during January at San Diego with representatives from MSFC, LeRC, AF/SSD, and GSFC.

4. At a meeting at MSFC on January 24 and 25, 1963, the OAO Milestone PERT Network was reviewed and appropriate changes were agreed upon. This network, Revision H, will be distributed late in January.

Test Program Status

1. The Pt. Loma Test Program was reviewed at GD/A's status review meeting, and the test program is on schedule.

2. LMSC is experiencing some trouble with a forged ring for the component program; however, this is not expected to delay the test.

J. (U) NIMBUS

1. The mechanical structural parts of the NIMBUS Agena Vehicle are presently in storage. DAC, under contract to GE/GSFC for the interstage adapter, will deliver the first flight interstage for match-mate scheduled during the week of February 20, 1963, at LMSC. During match-mate the interstage adapter will be fitted to the forward equipment rack of the Agena to insure a minimum 80% area contact. Because of the nature of the interstage adapter, a stabilization fixture will be attached to the forward face of the interstage adapter during match-mate operations.

2. A meeting will be held January 30-31, at LMSC with representatives of GSFC and GE to review the operational procedure and hardware requirements for match-mate.

Test Program Status

At the present time, the Test Program is proceeding as scheduled.

K. (C) A-12

1. The present launch date for Comsat A-12 is June, 1963. A recent TWX from Headquarters indicates there will be an additional slip in this program. The A-12 backup launch is under study and will not be scheduled until after the A-12 firing. If the first A-12 launch is successful, the A-12 backup will probably be cancelled or used for another mission.

2. The Agena vehicle (6301) for A-12 is now in storage. When this vehicle is removed from storage, components must be updated and the vehicle returned through system tests.

3. The Thor Booster for A-12 (372) is also in storage and will remain there until a definite launch date is established.

4. GSFC anticipates several changes will be made in the Restraints Document. A meeting with representatives of GSFC, MSFC, LMSC, LeRC, and Langley is needed to discuss these outstanding action items. This meeting can not be held until GSFC and Langley resolve the spacecraft problems.

L. (U) FIRE

Two meetings were held at GD/A during January. The first meeting was a System Integration Review conducted by GD/A, including their present status and activities in this area. The second meeting was the third Interface Working Group Panel Meeting.

The Program Support Plan has been received by Langley Research Center and MSFC. Langley will review this document to determine the adequacy of the support. Negotiations on letter contract AF-129 System Integration are scheduled for the week of February 11, 1963.

The facility modification proposal area estimate has been forwarded to Langley Research Center. This estimate is for design effort only.

The AGE Modification Proposal has also been forwarded to Langley Research Center. This includes GD/A and sub-contracted LMSC efforts in this area.

M. (U) UNIPAC Shroud

1. The second separation tests were completed January 10. The primary purpose of this series of tests was to determine the extent of contamination that might be expected from a shape charge shroud separation system.

2. This shroud system has been evaluated and the results are very favorable. This shroud system has been recommended to JPL for use with the Mariner "C" mission. JPL has concurred and the Mariner "C" letter contract shall be released immediately, directing LMSC to begin development of this system.

3. The third and last test of the phase I effort will be conducted on February 19 and will include shroud design improvements over the first two tests and include some actual S/C sensitive components as test specimens.

N. (U) Agena Performance Improvement Study

MSFC initiated this study by requesting that LMSC determine desirable long range developments for increasing the performance of Agena launch vehicles in combination with various first stage boosters. The study was to be conducted during a 3 1/2 month period with the first half devoted to a review of existing data relative to the potentiality of a large number of vehicle configurations incorporating specific improvements. The second half was devoted to a detailed analyses of the more promising vehicle combinations. The data yielded by this study will be used in making preliminary recommendations of vehicle configurations for future missions when the present vehicles are lacking in the necessary performance capability.

This study was completed by LMSC and an oral presentation was given at LeRC, Cleveland, Ohio on January 29, 1963. In addition to performance capability numbers, the results included preliminary estimates of R & D and launch costs for the configurations studied.

The study concluded that the following configurations appear to be the most attractive with respect to payload capability and costs:

a. Titan II/Agena D

b. Titan II/Agena D/Liquid propelled upper stage

c. Atlas/Agena D/Liquid propelled upper stage

d. Thorad A/Agena D (Thorad A consists of a basic Thor with extended tanks and 3 solid rocket boosters.)

LMSC also concluded that limited feasibility studies of Agena vehicles with high energy propulstion systems would be highly desirable.

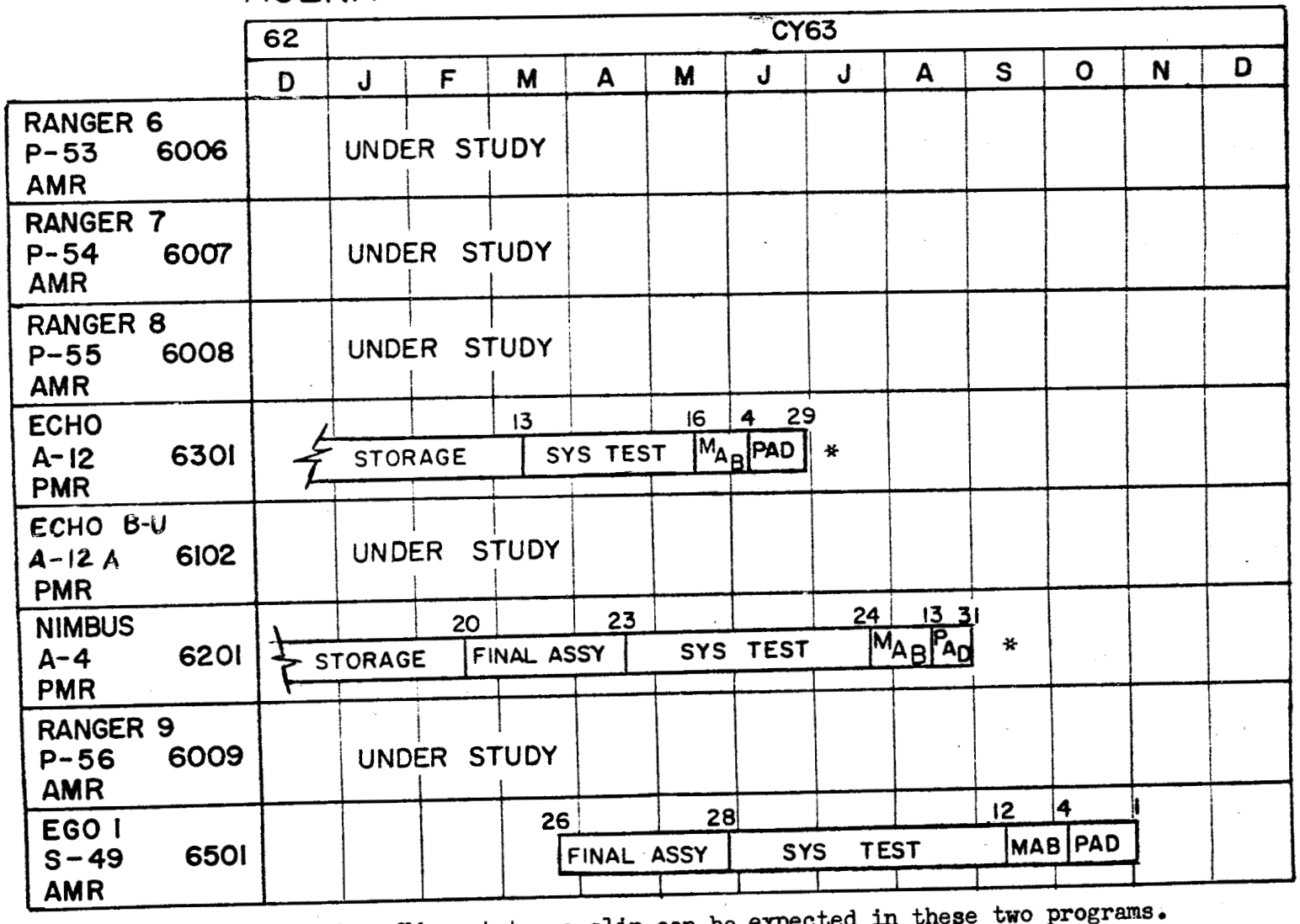
O. (U) Atlas Agena

The Florida Division of STL was chosen to perform a Probability of Launch Study which was begun in October 1962 at a cost of $70,000. The final report has been received and is being reviewed, pending contract termination on 31 January. Copies of the final report are being transmitted to LeRC for ultimate distribution.

STATUS OF AGENA STUDIES

TITLE	INITIATED BY	EST COST	MSFC GO-AHEAD	CONTRACT DATE	PRELIM. REVIEW	STUDY COMPLETION	FINAL REPORT	REMARKS
AGENA PERFORMANCE IMPROVEMENT STUDY LMSC	MSFC	$ 52,500	8-24-62	9-6-62	12-10-62	12-6-62	1-15-63	Completed. This is a performance study various combinations of first stage boosters using the Agena second stage vehicle. Oral presentation scheduled for January 29, 1963 at Lewis Research Center.
MARINER C INTER-FACE STUDY LMSC	JPL	30,000	8-16-62	8-62	10-11-62	11-62	12-10-62	To be updated by 2/1/63.
UNIPAC SHROUD STUDY, Phase I	MSFC	165,000	9-28-62	10-29-62	10-30-62	1-11-63	1-28-62	Phase I to be completed by early February 1963. First tests completed on 1-11-63. Additional Tests anticipated. Preliminary report received January 23, 1963. Final report should be available 2-28-63.
ATLAS/AGENA LAUNCH PROBABILITY STL	MSFC	70,000	10-1-62	10-1-62	N/A	1-63	1-63	Study is proceeding per contract schedule. Study Plan, first, and second Monthly Progress Reports have been received by MSFC. Draft of final report received and being reviewed.
S-6 TIROS FEASIBILITY STUDY.	MSFC	14,000	11-7-62	11-12-62	11-15-62	12-1-62	12-7-62	Completed

AGENA VEHICLE PRODUCTION STATUS



* Advance information from Hdq. states a slip can be expected in these two programs.

(U) CONTRACT STATUS

Mariner R-64. The Mariner R-64 Program was cancelled. This action was taken prior to negotiations for the definitive contract; therefore, no contract termination was involved except for the Level of Effort Study for 120 man months under Contract AF-592. Thirteen man months were actually expended under that contract prior to termination.

Mariner C-64. The Agena-D modifications for Launch Complex 12, AMR, which were covered by the Mariner R Work Statement are now included in the Work Statement covering planned Letter Contract AF 04(695)-291 for Mariner C-64. This letter contract will be issued by February 1, 1963.

Ranger 10-14. A Request for Proposal was issued January 22 to Lockheed covering Ranger 10 thru Ranger 14. A new contract will be issued to cover this procurement. This Request for Proposal contains estimated launch dates by quarter only. When the definitive launch schedule is determined, appropriate adjustments will be made to the cost proposal and work statement.

Fire. The cost proposal covering Project Fire facility modifications, CCN 171 to Contract AF-196, was received by SSD and forwarded to LeRC/MSFC and Langley Research Center for review. The cost proposal covering Project Fire AGE was also received and forwarded to LeRC/MSFC and Langley for review.

OAO. A work statement negotiation was held with representatives of MSFC/LeRC, AFSSD, and GD/A on January 10, 1963, covering the GD/A mission peculiar effort on the OAO Program. This effort is now covered by CCN to Contract AF-240.

AMR Launch Services. Negotiations were completed to definitize Contract AF-198 for AMR Launch Services between October 1, 1962, and December 31, 1962. The estimated cost is $5,600,000 and the fee is $392,000, making a total contract amount of $5,992,000. This will be a cost plus incentive fee contract with a 90-10 sharing to a maximum point 25% upward or downward from the estimated cost. NASA will fund a prorata share of the effort under this contract.

POGO. A revised work statement covering the POGO mission was received from Lockheed on January 25. This revision made some of the necessary changes to the previous work statement, but also made some changes in anticipation of an incentive contract. This revised work statement is being carefully reviewed by SSD and LeRC/MSFC prior to work statement negotiations.

CONTRACT STATUS
JANUARY 25, 1963

PROCUREMENTS	REQUEST FOR PROPOSAL	LETTER CONTRACT	WORK STATEMENT ISSUED	WORK STATEMENT AF REVIEW	COST PROP. SUBMITTED	NEGOTIATION SCHEDULE	DEFINITIVE CONT. ISSUED
POGO	7-13-62	N/A	10-12-62	1-29-63	12-4-62	~~2-4-63~~ to 2-14-63	3-8-63
OAO (GD/A)	N/A	AF-47 11-11-61 4-21-62 AF-768 1-2-62	11-20-62	1-10-63	3-10-63	4-10-63 to 4-20-63	AF-240 5-1-63
FIRE I	N/A	AF-189 10-62	6-62	9-11-62	11-19-62	2-11-63 to 2-15-63	2-28-63
AMR LCH SVCS	6-62	AF-198 10-62	6-62	9-62	9-28-62	*	
MARINER C (64)	N/A	2-1-63	3-1-63	3-20-63	3-1-63	3-20-63 to 3-29-63	4-15-63
RANGER 10-14	1-30-63	N/A	2-30-63	5-1-63	4-1-63	5-1-63 to 5-10-63	6-25-63

*Cost negotiations were completed, but before an agreement could be reached on fee, the Ranger Program was delayed. This contract is being changed to adjust, as much as possible, the launch base effort covered.

(U) FACILITIES

A. AMR COMPLEX 12 GANTRY MOD FOR OAO AND EOGO PROGRAMS

1. Background & Present Status:

Complex 12 gantry was originally built by the Air Force to support tactical Atlas launches and was later altered and made taller for Air Force space missions. With the beginning of NASA programs, Agena AGE and an umbilical tower were added to the complex by the Air Force.

At the inception of the OAO and EOGO Missions, the gantry was found inadequate to support these programs. Requirements made it necessary to provide additional clearance, a larger work area, greater crain hook height and an environmentally controlled shelter in the area of the experimental payload.

In May 1962 an Air Force Facilities Engineering contract was awarded to M. H. Connell and Associates, Miami, Florida for a criteria assembly study and later a design contract. The engineering design phase began in July 1962. The criteria and design inputs were furnished and reviewed by LMSC, GD/A, STL, JPL, AF/SSD, LOC, GSFC, and MSFC.

NASA funds totaling $690,000 have been transferred to AF/SSD from Marshall Facilities Engineering Office MSFC/FE to cover engineering and construction cost.

At the beginning of FY '63, MSFC/FE transferred their responsibility to LOC/FE, Cape Canaveral, Florida. The transfer coincided with the completion of the design effort of the EOGO and OAO mods.

In late September 1962 the Corps of Engineers, Jacksonville District executed contract No. 817 with ETS - Hokin and Galvin to make all modifications (Phase I) above gantry station 99. The work was originally scheduled to be performed in three increments of time; October 19, 1962 to December 12, 1962; January 17, 1963 to February 13, and March 17, 1963 to April 8, 1963. However, due to launch schedule changes the contractor is now allowed an uninterrupted work period from October 19, 1962 to April 8, 1963.

The complex 12 gantry originally was designed to withstand 120 MPH winds and following the original Air Force modification, its hurricane wind safety was reduced to approximately 90 MPH. After the OAO/EOGO

mods are completed, the tower will be capable of withstanding wind forces of only 70 to 80 MPH.

The LOC/FE Office proposed a continuation of this program and submitted to NASA Hq., a project request designated Phase II and Phase III.

Phase II would strengthen the structural members of the tower from station-0 to station 107 to withstand hurricane wind forces of 125 MPH. Phase II Architect Engineering design is complete. A contract can be awarded for the modification effort, following project approval by NASA Hq.

Phase III of the project consists of strengthening the mechanical members, providing a larger propulsion drive system and constructing a new tie down area to improve the capability to withstand hurricane wind loads.

Program funding is as follows:

	Phase I	Phase II	Phase III
Modification	Authorization Approved	Authorization Requested	Authorization Requested
Funds Available	$ 484,000	$ 146,000	- 0 -
Funds Requested	- 0 -	40,000	$ 500,000
	$ 484,000	$ 186,000	$ 500,000
Engineering			
Funds Available	$ 60,000	- 0 -	- 0 -
Funds Requested	- 0 -	- 0 -	$ 15,000
	$ 60,000	- 0 -	$ 15,000

2. Pending Action:

MSFC/FE has transferred $690,000 to the Air Force. Since phase I cost is estimated to be $484,000 the difference of $146,000 is being reserved for Phase II construction. Contract award is being withheld pending program approval by NASA Hq. and the availability of $40,000 additional funds required for this phase.

Phase III has not began pending program approval by NASA Hq. and the availability of program funds.

B. (U) PMR COMPLEX 75-1-1 THOR/AGENA PAD

Complex 75-1-1 is an Air Force pad used to launch Thor/Agena-B and Thor/Agena-D missions. All Thor and Agena vehicles fired from complex 75-1-1 are readied and checked while in vertical position on the pad prior to launch.

A limiting factor restricting each launch window is that the Thor must be revalidated after five days if for any reason the launch does not occur during the five day period. Since the Thor must be in the horizontal position for revalidation, the Scientific Payload must be removed before the Thor/Agena can be lowered from a vertical to horizontal position.

Action is being taken to incorporate a backup vertical revalidation following the original five days. It will be necessary to provide the following changes and equipment:

1 Table for checkout equipment

2 Work platforms

1 Guidance handling fixture

1 Leak detector

1 Set of cabling

1 Weather curtain

Procedures

The estimated cost for procurement of equipment is $50,000 and procurement lead time five months. Installation can be made without interfering with scheduled launches.

NASA AGENA LAUNCH SCHEDULE

[redacted]

MISSIONS UNDER CONTRACT

MISSIONS	1963 J	F	M	A	M	J	J	A	S	O	N	D	1964 J	F	M	A	M	J	J	A	S	O	N	D	1965 J	F	M	A	M	J	J	A	S	O	N	D
AMR																																				
Ranger 6 P-53 Atlas	(Under Study)																																			
Ranger 7 P-54 Atlas	(Under Study)																																			
Ranger 8 P-55 Atlas	(Under Study)																																			
FIRE 1 Atlas Scout	----------									X																										
Ranger 9 P-56 Atlas	(Under Study)																																			
EGO 1 S-49 Atlas	----------										X																									
FIRE 2 Atlas Scout	----------													X																						
EGO 2 S-49a Atlas	----------																X																			
OAO 1 S-18 Atlas	----------																									X										
PMR																																				
Comsat A-12 Thor	(Under Study)																																			
Backup A-12a Thor	(Under Study)																																			
Nimbus A-4 Thor	(Under Study)																																			
Nimbus A-5 Thor	----------																X																			
Nimbus NOS-01 Thor	----------																			X																
Nimbus NOS-02 Thor	----------																							X												

As indicated, all Ranger launch dates are Under Study. Ranger 6 will not be launched prior to Aug 63. Three launches are planned in CY 63 and four in CY 64.

PREPARED BY	H. Trexler	DATE 1/25/63
APPROVED	F. Clark	DATE 1/25/63

[redacted]

[redacted]

NASA AGENA LAUNCH SCHEDULE
APPROVED MISSIONS
NOT ON CONTRACT

MISSIONS			1963												1964												1965											
			J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
AMR																																						
Ranger 10*		Atlas	(Under Study)																																			
Ranger 11*		Atlas	(Under Study)																																			
Ranger 12*		Atlas	(Under Study)																																			
Ranger 13*		Atlas	(Under Study)																																			
Ranger 14*		Atlas	(Under Study)																																			
Mariner MC-1		Atlas																						X														
Mariner MC-2		Atlas																						X														
OAO-2	S-58	Atlas																																	X			
OAO-3	S-68	Atlas																																	(Jan 66)			
PMR																																						
POGO*	S-50	Thor														X																						
POGO*	S-50a	Thor																					X															
Nimbus 3	A-6	Thor TAT																									X											
Nimbus	NOS-03	Thor TAT																											X									
Nimbus	NOS-04	Thor TAT																																			X	
Nimbus 4	A-7	Thor TAT																																			(Mar 66)	
Nimbus	NOS-05	Thor TAT																																			(Jul 66)	

*In process of being put on contract

PREPARED BY H. Trexler DATE 1/25/63

APPROVED F. Clark DATE 1/25/63

[redacted]

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NASA AGENA LAUNCH SCHEDULE

[redacted] PROPOSED MISSIONS

MISSIONS		1964 J	F	M	A	M	J	J	A	S	O	N	D	1965 J	F	M	A	M	J	J	A	S	O	N	D	1966 J	F	M	A	M	J	J	A	S	O	N	D
AMR																																					
Adv Syncom 1	Atlas								X																												
FIRE 3	Atlas	(Under Study)																																			
EGO 3 S-59	Atlas													X																							
Adv Intermed Alt-1	Atlas													X																							
FIRE 4	Atlas	(Under Study)																																			
Adv Syncom 2	Atlas														X																						
Adv Intermed Alt-2	Atlas																		X																		
Adv Syncom 3	Atlas																				X																
EGO 4 S-59a	Atlas																					X															
Adv Intermed Alt-3	Atlas																						X														
Adv Syncom 4	Atlas																									X											
Solar Probe-1	Atlas																									X											
OSO S-67	Atlas																									X											
EGO 5 S-69	Atlas																													X							
Mariner Test	Atlas																													X							
Mariner Intrpl-1	Atlas																													X							
Adv Met Sat-1	Atlas																													X							
OSO S-67a	Atlas																														X						
Mariner Intrpl-2	Atlas																																X				
Solar Probe-2	Atlas																																X				
Adv Met Sat-2	Atlas																																X				
OAO-4 A-68a	Atlas																																		X		
PMR																																					
Bioscience Sat	Atlas											X																									
Bioscience Sat	Atlas																		X																		
Bioscience Sat	Atlas																									X											
POGO-3	Thor														X																						
Electric Eng-1	Thor																				X																
POGO-4	Thor																						X														
Electric Eng-2	Thor																						X														

Note: A Mariner C Test Mission in May 1964 is now under study by JPL and NASA Headquarters.

PREPARED BY H. Wrexler DATE 1/25/63

APPROVED F. Clark DATE 1/25/63

[redacted]

NASA-CLEVELAND, OHIO E-2072

APPROVAL MPR-A-63-2

AGENA MONTHLY PROGRESS REPORT

JANUARY 1963

The information in this report has been reviewed for security classification. Review of any information concerning DOD or AEC Programs has been made by the MSFC Security Classification Office. The highest classification has been determined to be [redacted].

Floyd M. Clark
for FRIEDRICH DUERR
Manager, Agena Systems Office

HANS HUETER
Director, Light and Medium Vehicles Office

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